

**CLAIMS:**

- 1) A transmitter for remotely controlling and testing a train having a locomotive in which is mounted a slave controller, said transmitter comprising:
  - 5 a) a control entity for issuing a plurality of commands to the slave controller for causing corresponding actions to be performed at the train;
  - b) the plurality of commands including a brake testing command for causing a brake pipe test to be initiated at the train;
  - 10 c) a communication entity in communication with said control entity for receiving commands issued by said control entity and for transmitting a signal over a communication link to the slave controller for conveying the commands issued by said control entity.
- 2) A transmitter as defined in claim 1, wherein said communication link is an RF  
15 communication link, and the signal being transmitted is an RF signal.
- 3) A transmitter as defined in claim 2, wherein the brake pipe test is either one of a brake pipe leakage test or an airflow test.
- 20 4) A transmitter as defined in claim 3, wherein said transmitter includes a visual indicator for displaying to a human operator results of the brake pipe test, said control entity being responsive to an RF signal received by said communication entity over the RF communication link, the RF signal conveying data derived from the brake pipe test to drive said visual indicator.  
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- 5) A transmitter as defined in claim 4, wherein the data derived from the brake pipe test includes data indicative of whether the test was passed or failed.
- 6) A transmitter as defined in claim 4, wherein the data derived from the brake pipe  
30 test includes a plurality of air pressure measurements.

- 7) A transmitter as defined in claim 6, wherein said control entity is adapted for computing from the plurality of air pressure measurements a data element indicative of whether the test was passed or failed.
- 5 8) A transmitter as defined in claim 5, comprising a user interface in communication with said control entity, said user interface comprising said visual indicator.
- 9) A transmitter as defined in claim 8, wherein said user interface includes a brake pipe test initiating command operable by a user, said control entity being responsive to  
10 operation of said brake pipe test initiating command to initiate a brake pipe test.
- 10) A transmitter as defined in claim 8, wherein the brake pipe test initiating command is a command for initiating a brake pipe leakage test.
- 15 11) A transmitter as defined in claim 8, wherein the brake pipe test initiating command is a command for initiating an air flow test.
- 12) A transmitter as defined in claim 3, wherein said transmitter includes an audio output for conveying to a human operator results of the brake pipe test, said control  
20 entity being responsive to an RF signal received by said communication entity over the RF communication link, the signal conveying data derived from the brake pipe test to drive said audio output according to the data of the brake pipe test.
- 13) A transmitter as defined in claim 12, wherein the data derived from the brake pipe  
25 test includes a data element indicative of whether the test was passed or failed.
- 14) A transmitter as defined in claim 12, wherein the data derived from the brake pipe test includes a plurality of air pressure measurements.
- 30 15) A transmitter as defined in claim 14, wherein said control entity is adapted for computing from the plurality of air pressure measurements a data element indicative of whether the test was passed or failed.

- 16) A transmitter as defined in claim 12, comprising a user interface in communication with said control entity, said user interface comprising said audio output.
- 17) A slave controller for use in a locomotive having a control interface, said slave controller comprising:
- 5       a) a control entity;
- b) a communication entity in communication with said control entity, said communication entity being adapted for receiving signals from a remote transmitter over a communication link conveying commands to said slave controller for causing corresponding actions to be performed at the locomotive;
- 10       c) said control entity being responsive to a brake testing command conveyed by signals in the communication link for issuing local control signals to the control interface for causing a brake pipe test to be initiated.
- 15   18) A slave controller as defined in claim 17, wherein said communication link is an RF communication link, and the signal being received is an RF signal.
- 19) A slave controller as defined in claim 18, wherein the local control signals issued to the control interface instruct the control interface to alter the air pressure in a brake pipe.
- 20   20) A slave controller as defined in claim 19, wherein said control entity is responsive to a signal received from the control interface conveying data generated by the brake pipe test, said RF communication entity outputting a signal over the RF communication link derived from the data generated by the brake pipe test.
- 25       21) A slave controller as defined in claim 20, wherein the data generated by the brake pipe test is the result of the brake pipe test, the signal output by said RF communication entity over the RF communication link including the results of the brake pipe test.
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- 22) A slave controller as defined in claim 21, wherein the results of the brake pipe test includes a data element indicative of whether the brake pipe test was passed or failed.
- 5 23) A slave controller as defined in claim 21, wherein the brake pipe test is a brake pipe leakage test.
- 24) A slave controller as defined in claim 23, wherein the results of the brake pipe test includes a data element indicative of a brake pipe leakage rate.
- 10 25) A slave controller as defined in claim 23, wherein the data generated by the brake pipe leakage test includes a plurality of air pressure measurements, said control entity being adapted for computing from the plurality of air pressure measurements the results of the brake pipe leakage test, the signal output by said RF communication entity over the RF communication link containing the results of the
- 15 brake pipe leakage test.
- 26) A slave controller as defined in claim 21, wherein the brake pipe test is an airflow test.
- 20 27) A slave controller as defined in claim 26, wherein the results of the brake pipe test includes a data element indicative of an airflow rate.
- 28) A slave controller as defined in claim 19, wherein said control entity is responsive
- 25 to a signal received from the control interface conveying data generated by the brake pipe test, for conveying to an operator information indicative of a result of the brake pipe test.
- 29) A slave controller as defined in claim 28, wherein the results of the brake pipe test
- 30 includes a data element indicative of whether the brake pipe test was passed or failed.

- 30) A slave controller as defined in claim 28, wherein the brake pipe test is a brake pipe leakage test.
- 31) A slave controller as defined in claim 30, wherein the results of the brake pipe test includes a data element indicative of a brake pipe leakage rate.
- 32) A slave controller as defined in claim 28, wherein the brake pipe test is an airflow test.
- 33) A slave controller as defined in claim 32, wherein the results of the brake pipe test includes a data element indicative of an airflow rate.
- 34) A method for remotely controlling and testing a train having a locomotive in which is mounted a slave controller, said method comprising:
- a) providing a transmitter having a user interface for receiving a plurality of commands from the user, the plurality of commands including a brake testing command for causing a brake pipe test to be initiated at the train;
  - b) in response to a command entered at said user interface by the user, generating internal signals in the transmitter representing the command entered at said user interface;
  - c) using the internal signals to generate a communication to the slave controller conveying the command entered at said user interface.
- 35) A method as defined in claim 34, said method further comprising conveying a brake pipe test result to the user of the transmitter.
- 36) A method as defined in claim 35, wherein the brake pipe test result is conveyed using a visual display device.
- 37) A method as defined in claim 36, wherein the visual display device is part of the transmitter.

38) A method as defined in claim 35, wherein the brake pipe test result is conveyed using an audio device.

39) A method as defined in claim 36, wherein the audio device is part of the transmitter.

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40) A method as defined in claim 35, wherein the brake pipe test result includes a data element indicative of whether the brake pipe test was passed or failed.

41) A method as defined in claim 35, wherein the brake pipe test is a brake pipe leakage test.

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42) A method as defined in claim 41, wherein the brake pipe test result includes a brake pipe leakage rate.

15 43) A method as defined in claim 34, wherein the brake pipe test is an airflow test.

44) A method as defined in claim 43, wherein the brake pipe test result includes an airflow rate.